Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims

1.   (Currently Amended)   A method of transmitting a stream of data packets over a bi-directional contention and reservation based network, the network including an operably linked system controller for receiving upstream channel packets and originating downstream channel packets, at least one operably linked remote terminal for receiving the downstream channel packets and originating the upstream channel packets, the network providing individually unsolicited periodically allocated grants from the system controller to the at least one remote terminal in the downstream channel for scheduling data packet transfers in the upstream channel, the individually unsolicited periodically allocated grants having a bandwidth size, and the network providing dynamically allocated grants from the system controller to the at least one remote terminal in the downstream channel upon request of the at least one remote terminal for scheduling data packet transfers in the upstream channel, the dynamically allocated grants being of a requested bandwidth size, the method comprising:

determining a bandwidth size for the stream of data packets, the bandwidth size being substantially equal to an average bit-rate of the stream of data packets;

determining a bandwidth size for the individually unsolicited periodically allocated grants, the bandwidth size being substantially equal to an average bit-rate of a stream of packets transmitted using the unsolicited periodic grants;

determining whether the bandwidth size of a the data packet of a stream of data packets to be transmitted from the at least one remote terminal through the upstream channel is greater than the bandwidth size of the individually unsolicited periodically allocated grant, and, if so;

requesting the dynamically allocated grant, the requested dynamically allocated grant being of a bandwidth size equivalent to the bandwidth size by which the data packet exceeds the bandwidth size of the unsolicited periodically allocated grant;

transmitting a first portion of the data packet in response to the unsolicited periodically allocated grant along with the dynamically allocated grant request; and

transmitting a remaining portion of the data packet in response to a next available individually unsolicited periodic grant or dynamically allocated grant.

2.   (Currently Amended)   The method of claim 1 further comprising:

determining whether a combined bandwidth size of the remaining portion of the data packet and a subsequent data packet of a stream of data packets to be transmitted from the at least one remote terminal through the upstream channel is greater than the size of the next available grant, and, if so;

transmitting at least the remaining portion of the data packet in response to the grant, and, where the grant is [[a]] one of the individually unsolicited periodically allocated grant;

requesting a further dynamically allocated grant along with the transmission of the at least remaining portion, the requested dynamically allocated grant being of a bandwidth size by which the remaining portion of the data packet and the subsequent data packet exceed the size of the next available grant; and

transmitting at least the remaining portion of the subsequent data packet in response to a next available grant.

3.   (Original)   The method of claim 1 wherein the bandwidth size of a data packet of a stream of packets is determined by storing the data packet in a buffer of the at least one remote terminal and the bandwidth size of the stored data packet is determined by comparing the bandwidth size of the buffer contents to at least one bandwidth size threshold value.

4.   (Original)   The method of claim 1 wherein the remaining portion is transmitted in response to the dynamically allocated grant corresponding to the request.

5.   (Currently Amended)   The method of claim 1 wherein the first portion bandwidth size is less than or equal to about the bandwidth size of the individually unsolicited periodically allocated grant.

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6.   (Currently Amended)   The method of claim 1 wherein the <u>stream of</u> packet data is <u>variable-bit rate</u> compressed video data.

7.   (Original)   The method of claim 6 wherein the video is compressed pursuant to the motion picture experts group standard (MPEG).

8.   (Original)   The method of claim 1 wherein the network is data over cable system interface (DOCSIS) compliant.

9.   (Original)   The method of claim 1 wherein the request resides in an extended header of the first portion transmission.

10.   (Original)   A method of transmitting variable bit rate data packets over a bi-directional contention and reservation based network, the network including an operably linked system controller for receiving upstream channel packets and originating downstream channel packets, at least one operably linked remote terminal for receiving the downstream channel packets and originating the upstream channel packets, the network providing periodically allocated grants from the system controller to the at least one remote terminal in the downstream channel for scheduling data packet transfers in the upstream channel, the periodically allocated grants having a bandwidth size, and the network providing dynamically allocated grants from the system controller to the at least one remote terminal in the downstream channel upon request of the at least one remote terminal for scheduling data packet transfers in the upstream channel, the dynamically allocated grants being of a requested bandwidth size, the method comprising:

decomposing a first variable bit-rate data packet of a stream of data packets to be transmitted from the at least one remote terminal through the upstream channel into a constant bit-rate packet portion and a variable bit-rate packet portion, the constant bit-rate packet portion having a bandwidth size substantially equal to the average bit-rate of the stream of packets;

determining whether the bandwidth size of the decomposed packet is greater than the size of the periodically allocated grant, and, if so;

requesting a dynamically allocated grant, the requested dynamically allocated grant substantially equal in bandwidth size to the variable bit-rate packet portion;

transmitting the constant bit-rate packet portion in response to a periodically allocated grant; and

transmitting the variable bit-rate packet portion in response to a next available grant.

11.   (Original)   The method of claim 10 wherein the bandwidth size of a data packet of a stream of packets is determined by storing the data packet in a buffer of the at least one remote terminal and the bandwidth size of the stored data packet is determined by comparing the bandwidth size of the buffer contents to at least one bandwidth size threshold value.

12.   (Original)   The method of claim 10 wherein the variable bit-rate packet portion is transmitted in response to the dynamically allocated grant corresponding to the request.

13.   (Original)   The method of claim 10 wherein the variable bit rate packet data is compressed video data.

14.   (Original)   The method of claim 13 wherein the video is compressed pursuant to the motion picture experts group standard (MPEG).

15.   (Original)   The method of claim 10 wherein the network is data over cable system interface (DOCSIS) compliant.

16.   (Original)   The method of claim 10 wherein the request resides in the extended header of the constant bit-rate packet.

17.   (Previously Presented)   A method of dynamically adjusting the size of a periodically allocated grant of a bi-directional contention and reservation based cable network, the method comprising:

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      determining an average bandwidth size of an unused portion of the periodically

allocated grant;

      determining an average bandwidth size of requested dynamically allocated

grants; and

      adjusting the bandwidth size of the periodically allocated grant based on the

measured sizes and at least one predetermined threshold.

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